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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/535,702 | 05/19/2005 | Shuichi Ichikawa | 123973 | 7563 |

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P.O. BOX 19928
ALEXANDRIA, VA 22320

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| EXAMINER |
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HAILEY, PATRICIA L

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| ART UNIT | PAPER NUMBER |
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1755

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 03/20/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/535,702

Applicant(s)

ICHIKAWA ET AL.

Examiner

Patricia L. Hailey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 05/19/05; 08/19/05.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

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Applicants' Preliminary Amendment, filed on May 19, 2005, has been made of record and entered. With the entry of this amendment, claims 1-12 have been canceled, and new claims 13-24 have been added.

Claims 13-24 are now pending in this application.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Applicants' Priority Document was filed on May 19, 2005.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. ***Claims 13-19, 21, and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Deeba et al. (U. S. Patent No. 6,764,665).***

Deeba et al. teach a layered catalyst composite comprising a carrier, and three layers deposited thereon.

The carrier preferably comprises a metal or ceramic honeycomb structure, and may be a ceramic carrier such as silicon nitride. See col. 5, lines 2-24 of Deeba et al. If the carrier is metallic in nature, the surface thereof may be oxidized to form an oxide layer on its surface. See col. 5, lines 25-45 of Deeba et al. (considered to read upon **claims 14, 15, and 22**).

The first layer deposited on the carrier comprises a refractory metal oxide such as titania, silica, zirconia, and mixtures thereof. The first layer may also contain platinum, as well as an oxygen storage component, such as one or more reducible oxides of one or more rare earth metals. Further, the first layer may contain a promoter; exemplary promoters include one or more non-reducible oxides of one or more rare earth metals selected from the group consisting of lanthanum, praseodymium, yttrium, zirconium, and mixtures thereof. See col. 5, line 46 to col. 6, line 9 of Deeba et al. (considered to read upon **claims 16-18, and also claim 19**).

The second layer comprises palladium and/or platinum deposited on a refractory metal oxide, and may also comprise stabilizers such as non-reducible metal oxides, wherein the metal is selected from the group consisting of barium, calcium, magnesium, strontium, and mixtures thereof, and may also comprise promoters including one or more non-reducible rare earth metal oxides. See col. 6, lines 11-35 of Deeba et al. (considered to read upon **claim 21**).

In view of these teachings, Deeba et al. anticipate claims 13-19, 21, and 22.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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7. Claims 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deeba et al. (U. S. Patent No. 6,764,665) in view of Matsuura et al. (U. S. Patent No. 5,846,460).

Deeba et al. is relied upon for its teachings in the above 102(b) rejection.

Although this reference teaches a porous carrier reading upon that instantly claimed, Deeba et al. is silent with respect to the porosity of said carrier.

Matsuura et al. teaches a silicon nitride carrier (employable as a filter or catalytic carrier, see Abstract) exhibiting a porosity of at least 20 vol. % and not more than 75 vol. %. See col. 6, lines 16-28 of Matsuura et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Deeba et al. by employing a silicon nitride carrier such as that taught by Matsuura et al., and thereby obtain Applicants' invention.

8. Claims 13 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deeba et al. (U. S. Patent No. 6,764,665) in view of Dang et al. (U. S. Patent No. 6,613,299).

Deeba et al. is relied upon for its teachings in the above 102(b) rejection. Deeba et al. do not teach or suggest the limitations of claims 22-24.

Dang et al. teach a catalyzed diesel particulate filter comprising a porous filter substrate formed from a conventional filtering product, such as a honeycomb, monolith or foam structure. Preferably, the filter substrate has a significant flow-through capacity

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so as not to prevent or restrict significantly; however, it must also contain sufficiently convoluted passageways to cause the particulate matter to drop out of the exhaust gas stream and be retained by the filter substrate. See col. 4, lines 9-22 of Dang et al.

Examples of the filter substrate include silicon carbide; the filter substrate is preferably impregnated with a catalytic material (e.g., alkaline earth metal vanadate, and precious metal such as platinum, palladium, etc.). See col. 4, lines 23-53 of Dang et al.

With respect to claim 24, it is considered that because the prior art teaches a singular filter structurally reading upon that instantly claimed, a number of the same filters, bonded together, would be within the level of ordinary skill in the art. The concept of duplication is not patentable. St. Regis Paper Co. v. Bemis Co. Inc., 193 U.S.P.Q. 8, 11 (7th Cir. 1977). While this decision relates to the duplication of parts, there is no reason why such duplication cannot be extended to a process step.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Deeba et al. by incorporating therein the porous filter substrate disclosed in Dang et al., and thereby obtain Applicants' invention.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (571) 272-

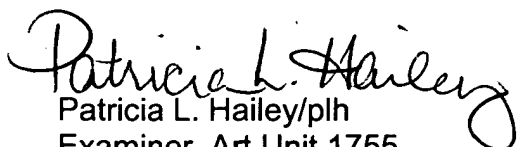
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1369. The examiner can normally be reached on Mondays-Fridays, from 7:00 a.m. to 3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 1700 Receptionist, whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Patricia L. Hailey/plh
Examiner, Art Unit 1755
March 5, 2007


J. A. LORENGO
SUPERVISORY PATENT EXAMINER